

ABSTRACT

The present invention is intended to provide a resin and a resin composition that can be diluted with water and is excellent in providing a cured product (curing, adhesion, and water resistance); a resin composition that is suitable for a solder resist and an interlayer dielectric layer because the cured product is excellent in flexibility, soldering-heat resistance or the like and allows a development with an organic solvent or a dilute alkali solution; a photosensitive resin composition suitable for an etching resist or a cover lay; and a photosensitive film obtained thereby.

A urethane oligomer (A) obtained by reacting a polyol compound(a) with a polybasic acid anhydride(b-1) having at least two acid anhydride groups per molecule, a polyisocyanate compound(c), and a hydroxy compound having ethylenically unsaturated groups; and

A resin composition and a photosensitive film comprising (1) the above oligomer (A); (2) one or more resins selected from an unsaturated group-containing polycarboxylic acid (B), a reactive diluent(C-1) such as (meth)acrylates, an unreactive diluent(C-2) such as carbitol acetate and a thermoplastic polymer(D); and (3) a photopolymerization initiator.

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (8-96)

Approved for use through 9/30/98. CMB 0651-0032

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid CMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION <input type="checkbox"/> Declaration OR Submitted with Initial Filing <input type="checkbox"/> Declaration Submitted after Initial Filing	Attorney Docket Number	576P040
	First Named Inventor	Satoshi MORI
	COMPLETE IF KNOWN	
	Application Number	
	Filing Date	
	Group Art Unit	
	Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, (first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

URETHANE OLIGOMER, RESIN COMPOSITIONS THEREOF AND CURED ARTICLE THEREOF

(Title of the invention)

The specification of which

☐ is attached hereto
OR
☒ was filed on (MM/DD/YYYY)

March 15, 2000

as United States Application Number or PCT International

Application Number

PCT/JP00/01567

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code § 119 (a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365 (a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
11/74939	JAPAN	03/19/1999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/96195	JAPAN	04/02/1999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/187113	JAPAN	07/01/1999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/254830	JAPAN	09/08/1999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority sheet attached hereto:

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.

[Page 1 of 5]

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner of Patents and Trademarks, Washington, DC 20231.

(January 1997)

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (2-96)

Approved for use through 9/30/98, OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s), or §365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority sheet attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Name	Registration Number	Name	Registration Number
Kevin S. Lemack	32,579	Brian M. Dingman	32,729
Henry C. Nields	17,029		

☐ Additional registered practitioner(s) named on a supplemental sheet attached hereto.

Direct all correspondence to:

Name	Kevin S. Lemack		
Address	Nields, Lemack & Dingman		
Address	176 E. Main Street - Suite 8		
City	Westboro	State	MA
Country	U.S.A.	Telephone	(508) 898-1818
		Fax	(508) 898-2020

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor

Given Name	Satoshi	Middle Initial		Family Name	MORI	Suffix e.g. Jr.	
Inventor's Signature	Satoshi Mori				Date	July 19, 2001	

Residence: City	Tokyo	State		Country	Japan	Citizenship	Japan
Post Office Address	Plaza Akabane 203, 3-33-5 Shimo, Kita-ku,						
Post Office Address							
City	Tokyo	State		Zip	115-0042	Country	Japan

☒ Additional inventors are being named on supplemental sheet(s) attached hereto